ATLAS RESIN
PROPPANTS
N7530 Cty. Rd. P • P.O. Box 100 • Taylor, WI 54659 • USA
Tel: 715.662.2200 • Fax: 715.662.2213

December 7, 2010

Wisconsin Department of Natural Resources
West Central Region Air Program
1300 W. Clairemont
PO Box 4001
Eau Claire, WI 54702-4001

Subject: Notice of Stack Test

Mr. Jeff Johnson:

Atlas Resin Proppants, LLC, (Atlas) is providing the Wisconsin Department of Natural Resources this notice that Atlas will conduct a stack test at the Taylor, WI facility located at N7530 County P, on January 12th-13th 2011 . This notice is required by Condition I.ZZZ.2.a.(3) of Atlas' operation permit, Permit No. 627005280-P02.

Included with this notice is the Test Plan Outlined from Badger Laboratories detailing the testing approach to be conducted on the above mentioned days.

If you have any questions or need further details, please call me at 715-662-2200.

Sincerely,

Erica Grant

Erica Grant
Production Manager, Taylor Facility
Atlas Resin Proppants LLC

December 13, 2010

Mr. Jeff Johnson
Wisconsin Department of Natural Resources
West Central Region
1300 W. Clairemont PO Box 4001
Eau Claire, WI 54702-4001

Dear Mr. Johnson:

The following data is submitted regarding the source test plan of sampling for Particulate emissions to be followed at Atlas Resin Proppants. The facility is located north of Taylor, WI, off County Road P in Jackson County. The testing is being performed to demonstrate compliance with Wisconsin Department of Natural Resources (WDNR) Air Pollution Control Operation Permit No. 627005280-P02 limitations for Particulate emissions on one of the Sand Resin Coating processes (P50 or P150). The testing is scheduled for approximately 9:00 A.M. on January 12, 2011. The Atlas Resin Proppants contact is Ms. Erica Grant (phone #715-662-2200).

The emissions test will be run by Mr. Bruce Lamers who has more than fifteen years experience in stack emission testing.

Applicable methods for Particulate testing are EPA Methods 5 and 202. The sampling equipment for the Particulate testing consists of a Millennium Instruments Mill-5 stack sampler. A schematic of the sampling train is included as Figure 5. A Hayes Orsat Analyzer will be used for determining the gas stream molecular weight.

The emission test will consist of three repetitions of these methods. The arithmetic mean of the test results will be supplied as well as all raw data from each test run. The testing procedure is summarized as follows:

1. Determine sample points and initial velocity traverse.
2. Velocity, temperature and flow rate measurements.
3. Moisture and molecular weight determination.
4. Particulate testing.
5. Sample recovery and Analysis.
6. Calculations and report.

Sand Resin Coating Process (P50 or P150)

The testing is to be performed on the discharge of one of the sand resin coating processes (P50 or P150). Heated sand and flake resins, with a small amount of additives are mixed in the Batch Mixer. An aqueous hexamethylenetetramine solution is added to the Batch Mixer to cross-link the melted flake resin and begins cooling the coated sand. Each Batch Mix is 2,500 to 2800 pounds depending on product type. There are 11 batches per hour. During the emission test the process will be operated at this rate. Each batch is discharge into a Continuous Mixer (P52 or P152) which is

designed to keep the process flowing as discrete particles until the product has cooled. The Continuous Mixer converts the batch process into a continuous process. There is a wet scrubber (C50 or C150) that is used to control emission from this source. The wet scrubber also controls emissions from Sludge Tank (P53 or P153).

The outlet sampling ports lie in a straight section of twenty inch diameter stack, more than eight diameters downstream and more than two diameters upstream of any flow disturbance. Sampling time will be determined after initial velocity measurements are made. A minimum sampling time of one hour will be used to obtain at least 30 cubic feet through the dry gas meter for the Particulate tests. Twelve points will be used for the Particulate sampling.

The Particulate emission limitation for this source is 1.5 pounds per hour.

Process data required during the testing will be collected by Atlas Resin Proppants personnel. The process data will include number of batches, pressure drops across the wet scrubber, liquor flow rates to scrubber and pH of wet scrubber absorbing fluid. NTU's will also be monitored. A CRC product will be run during the testing.

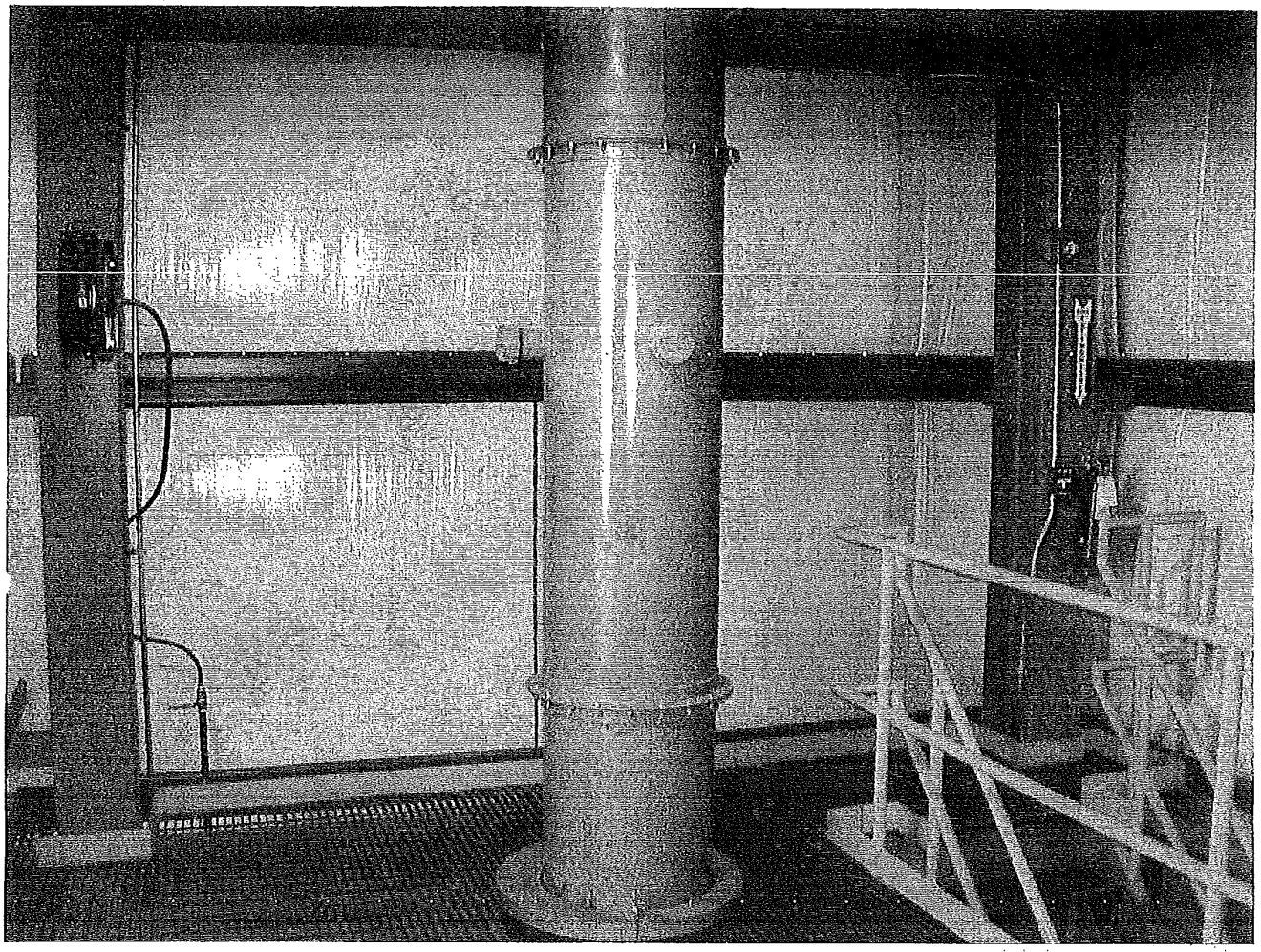
Please call me at 920-729-1100 or 800-776-7196 if you have any questions.

Very truly yours,

BADGER LABORATORIES & ENGINEERING
WDNR Certified Lab No. 445023150

Bruce F. Lamers
Project Manager

cc: Ms. Erica Grant
Atlas Resin Proppants



S150

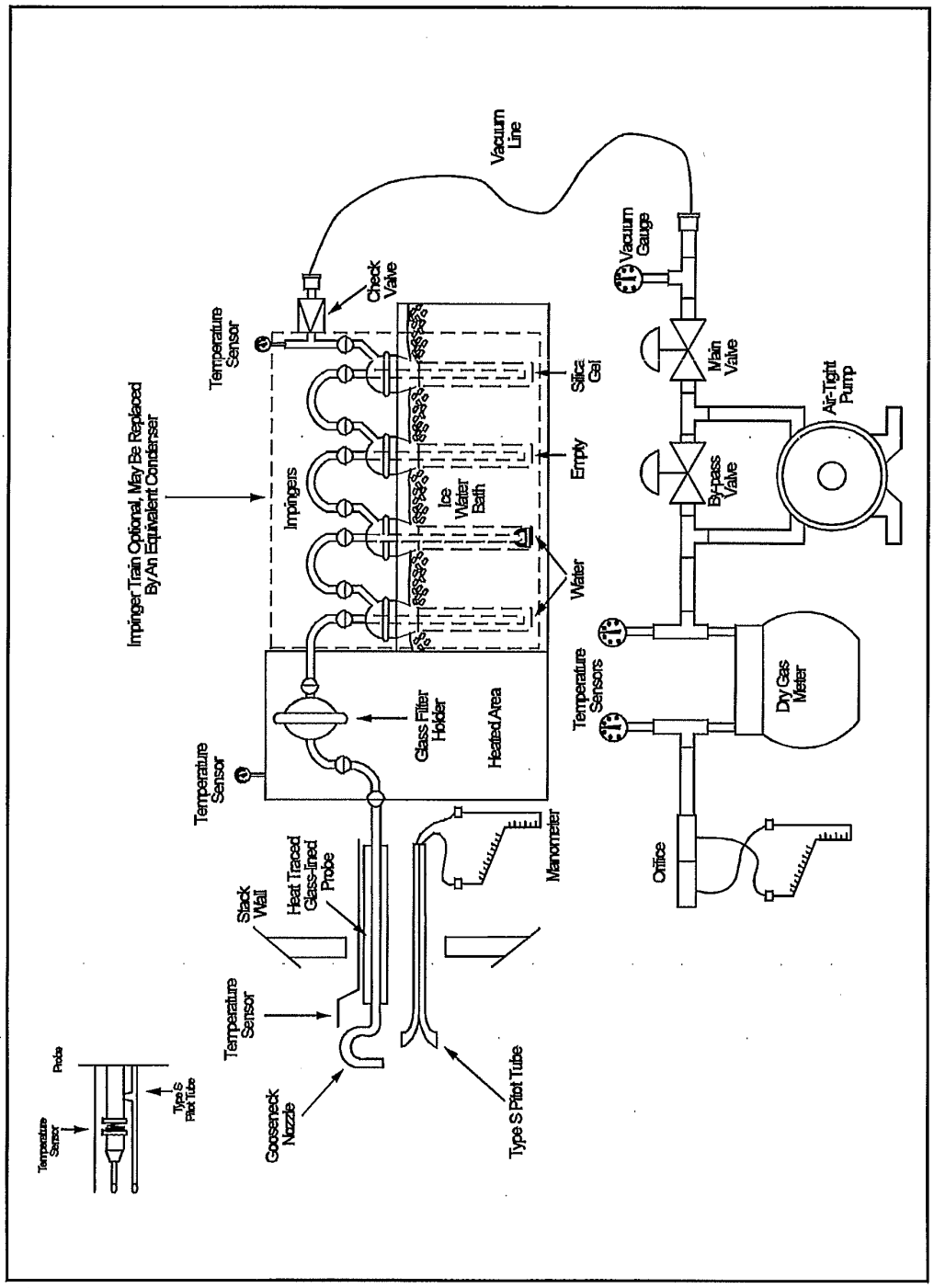


Figure 5-1. Particulate Sampling Train.

ATLAS RESIN PROPPANTS

To: Jeff Johnson, WDNR

From: Erica Grant
Atlas Resin Proppants
715-662-2200 ext.231

Date: November 11, 2010

Re: NTU's while running CRC, Operation Permit No.: 627005280-P02

As per our discussion on the morning of November 9th this letter is intended to outline our plan for demonstrating compliance with Conditions I.E.1.b.(6) and I.J.1.b.(6) of the above-noted permit while running our CRC product. In support of demonstrating compliance with particulate matter emission limits, and along with other parametric monitoring requirements (*e.g.*, pressure drop, liquor flow rate), these conditions require that the solids content of the recirculated scrubber water for Towers A & B, respectively, be maintained between 0 and 550 Nephelometric Turbidity Units (NTU).

NR 439.055(1)(e) stipulates only the monitoring of pressure drop and scrubber liquor flow as indicators of wet scrubber performance used for particulate control, which is consistent with the primary indicators specified in USEPA's *CAM Technical Guidance Document*[1]. In addition to these parameters, monitoring of the solids content (*i.e.*, total suspended solids [TSS] in terms of NTU) is included in the current operating permit. However, since the measurement of solids content as a performance indicator is not included in NR 439 or in USEPA compliance assurance monitoring (CAM) guidance, there is some question as to the value of monitoring the solids content as a means to assess performance beyond that which is provided by monitoring the pressure drop and flow rate.

Furthermore, there are potential issues related to the relative accuracy of turbidimeters used to measure the solids content in terms of NTU. Turbidimeters provide a reading of the amount of scattered light, which cannot be directly correlated to a gravimetric equivalent unless a working curve for the specific sample is created. The intensity of scattered light is affected by many variables such as wavelength, particle size, color, and shape. Instrument readings are also affected by the number and placement of detectors. For example, turbidimeters with a single detector tend to be less sensitive to solutions that are highly colored or contain light absorbing particles. Such conditions decrease the amount of scattered light that reaches a detector, thereby indicating a falsely low turbidity and, as such, are referred to as *negative interferences*. Conversely, *positive interferences* can result in falsely high turbidity readings. For example, foam/bubbles present in a sample tend to reflect and scatter light, thereby resulting in falsely high turbidity readings.

[1] http://www.epa.gov/ttnchie1/mkb/documents/Scrub_B.pdf

Since beginning to run our new CRC product, which requires two different resins, we have experienced problems keeping our scrubber water NTU's below 550, despite maintaining both the pressure drop and liquor flowrates within corresponding permit limits. We believe the turbidity readings are falsely high due to the foam/bubbling that occurs in the scrubber water when running the CRC. To keep the turbidimeter instrument readings below 550 requires frequent change-out of the scrubber water,which has lead to a large expense for us in that we are having to shutdown quite often to pump out scrubber water and replace it with new water.

We respectfully request that the WDNR issue a temporary variance to the above-noted solids content monitoring conditions in our permit, such that the quantitative NTU limits in the permit do not apply when running CRC product. Over this period, we will schedule a particulate matter stack test with Badger Labs, to measure outlet particulate matter emissions from one of the two Scrubbers when running CRC product. During the stack test, both NTU and conductivity measurements will be taken to establish an NTU limit that is specific to CRC product. I have contacted them and they will be getting back to me with available dates in the next few days. As soon as we have a date scheduled I will let you know. I also propose that if conductivity (as a measurement of total dissolved solids [TDS]) proves to be a more stable means of measurement for our scrubber water, we look at changing the measurement method from NTU's and set a limit for microsiemens (µS).

Thanks you for your time and consideration on this matter. Please contact me with any questions or concerns.

Erica Grant

Erica Grant

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
West Central Region Headquarters
PO Box 4001
Eau Claire WI 54702-4001

Scott Walker, Governor
Cathy Stepp, Secretary
Scott Humrickhouse, Regional Director
Telephone 715-839-3700
FAX 715-839-6076
TTY Access via relay - 711

WISCONSIN
DEPT. OF NATURAL RESOURCES

February 25, 2011

Mr. Robbie Sage
Atlas Resin Proppants
P.O. Box 100
N7530 County Road P
Taylor WI 54659

Subject: Particulate Matter Emissions Compliance via NTU Readings – Release from Compliance Demonstration Methods

Dear Mr. Sage:

The Department received notification from Atlas Resin that compliance with conditions I.E.1.b.(6) and I.J.1.b.(6), under permit 627005280-P02 may not be feasible under all operating scenarios. Furthermore, those conditions are not common monitoring parameters required under s. NR 439.055. The conditions require the permittee to monitor the solids content of recirculated scrubber water, maintained between 0 NTU to 550 NTUs (or an alternative range approved in writing by the Department), which will assure compliance with the particulate matter emission limits for the corresponding processes.

Atlas Resin requested, on November 11, 2010, a variance from maintaining NTU values between 0 to 550 until such time the facility conducts stack testing to verify that the NTU values do, or do not, represent a valid measurement of compliance with the particulate matter emission limits. The Department granted the variance on November 11, 2010, which included a requirement for stack testing and verifying the proper NTU range if necessary.

Atlas Resin completed the stack testing, for the sand resin coating process (P150), on January 12, 2011. The results of the test were submitted to the Department on February 9, 2011 (received date). The test results demonstrated compliance with the particulate matter emissions limit of 1.5 pounds per hour, with an actual emissions rate of 0.855 pounds per hour. The test data showed the value of NTU readings were consistently greater than 10,000 units. Therefore, it is apparent that the NTU values do not represent a valid monitoring method to demonstrate compliance with the particulate matter emissions limit.

The Department therefore grants, effective the date of this letter, a release from utilizing this specific monitoring compliance demonstration method, as required under conditions I.E.1.b.(6) and I.J.1.b.(6) of operation permit 627005280-P02. Furthermore, the facility no longer shall be required to record the solids content (NTU values) under conditions I.E.1.c.(3)(d) and I.J.1.c.(3)(d).

Please retain this correspondence with your permit file/records. Furthermore, when the facility applies for its operation permit renewal, please attach this correspondence as a requested change so that the permit may be revised at that time.

Please let me know if you have any questions or concerns, 715-838-8387, or by email at Jeffery.Johnson@Wisconsin.gov.

Sincerely,

Jeffery Johnson, P.E.
Environmental Engineering Supervisor – WCR

cc: Erica Grant, Production Manager – Atlas Resin (e-copy)
Dawn Tiffany, Safety, Health & Environmental Specialist – Atlas Resin (e-copy)
Linda Lund – DNR, AM/7

WISCONSIN
DEPT. OF NATURAL RESOURCES

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Scott A. Humrickhouse, Regional Director

West Central Region Headquarters
1300 W. Clairemont, PO Box 4001
Eau Claire, Wisconsin 54702-4001
Telephone 715-839-3700
Fax 715-839-6076
TTY 715-839-2786

November 11, 2010

FILE CODE: 4560
FID NO.: 627005280
OPERATION PERMIT NO.: 627005280-P02

Erica Grant, Production Manager – Taylor Plant
Atlas Resin Proppants
N7530 County Road P
Taylor, WI 54659-0100

Dear Ms. Grant:

I received your compliance variance request dated November 11, 2010, in regards to operating processes P51 and P151, and control devices C50 and C150 outside the permitted NTU range of 0 to 550; conditions I.E.1.b.(6) and I.J.1.b.(6) of permit 627005280-P02. Based on the information provided in your letter, and correspondence between you, Tom Ponty (DNR) and myself, the department grants your variance request with the following conditions/authority/approvals:

1. The authority to establish NTU as an operational parameter to be monitored to demonstrate compliance with the particulate matter limitations is under s. NR 439.055(6), Wis. Adm. Code.
2. Operation permit 627005280-P02, conditions I.E.1.b.(6) and I.J.1.b.(6) allows the department to approve an alternate range for NTU.
3. The facility has preliminarily demonstrated NTU values may be outside the permitted range of 0 to 550 while still complying with the particulate matter emission limitations, when running CRC product during operations of the processes and control devices.
4. The facility shall conduct a particulate matter emissions test while utilizing CRC to demonstrate compliance with the particulate matter emission limitations, along with taking measurements of NTU; thereby establishing a potential new valid range of acceptable NTU values.
5. Until such time the emissions test has been conducted, test results reviewed, and a new range for NTU has been established demonstrating compliance, the facility may operate the processes outside the 0 to 550 NTU range.
6. The facility shall follow the procedures for stack testing provided under condition I.ZZZ.2. of operation permit 627005280-P02, including any notification and test plan submittals. Such notifications and plan submittals can be directed to Jeff Johnson – WCR (Eau Claire).
7. Further review of the necessity for NTU, and/or any other potential compliance demonstration method (e.g. conductivity), shall be discussed upon completion of the emission testing and review.

Please let me know if you have any further questions or concerns.

Sincerely,

Jeffery Johnson, P.E.
Environmental Engineering Supervisor - WCR